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Scottish Centre for Research on
SOCIAL JUSTICE

Migration flows in Regeneration Outcome Agreement Areas

An analysis of Census migration data for the Scottish Executive

Nick Bailey and Mark Livingston
Department of Urban Studies
University of Glasgow

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Department of Urban Studies
University of Glasgow
25 Bute Gardens
Glasgow G12 8RS
www.gla.ac.uk/urbanstudies

UNIVERSITY *of* GLASGOW

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1. Introduction

This analysis has been commissioned by the Scottish Executive to build on the earlier work undertaken by the authors on migration flows for deprived neighbourhoods in Scotland and England (Bailey and Livingston, 2007). This additional work is designed to explore differences in migration flows between Datazones in Regeneration Outcome Agreement Areas (ROA Areas) and other parts of the country.

The main reason for commissioning the analysis is to provide a base for later studies of population movement and area change in the ROA Areas, notably those that will follow the 2011 Census. A further reason is that knowledge of migration flows from the last Census (for 2000-1) may prove valuable now, in helping Community Planning Partnerships (CPPs) understand and address the challenges in their ROA Areas. The growth in neighbourhood statistics has provided unprecedented details of the characteristics of deprived areas but it presents a largely static picture. It tells us about the stock of people in an area at a given point in time but little about how this stock is changing. Understanding the dynamics of neighbourhood migration flows can provide additional insights which may assist local regeneration efforts.

The analysis looks at all Datazones in Scotland. For each local authority that has ROA Areas, the analysis contrasts migration flows for Datazones in ROA Areas with (i) other Datazones in the most deprived 25 per cent and (ii) other Datazones outside the bottom 25 per cent. The main data source on migration and area characteristics is the 2001 Census of Population. Deprivation is measured on the Scottish Index of Multiple Deprivation 2004 (SIMD 2004). This version of the index is used as it was the basis on which ROA Areas were originally designated.

2. Background

The main report provides a full discussion of the policy background for this analysis, defines the measures used and gives details of the data sources and methods (Bailey and Livingston, 2007). A brief note on the methods is included in this note in Appendix A.
Three aspects of neighbourhood migration flows are examined in particular.

2.1 Area stability

Area stability refers to the extent to which the individuals living in a neighbourhood are the same from one year to the next. Stability is measured by the gross turnover: the total number of in-, out- and within-area moves as a proportion of the population.

A high turnover of population need not be seen as problematic for a neighbourhood – it may just reflect the function which that place plays as a point of entry to the housing system, for example. For deprived neighbourhoods, however, instability is often considered to be both a sign of problems in the area and a cause of further problems. Instability can disrupt social or community ties, reducing sources of informal support for individuals, eroding collective capacity and contributing to a loss of informal social control. On-going research for the JRF

suggests that turnover is also a source of anxiety as people worry about who will move into vacated properties.

2.2 Area connection

Area connection refers to the geography of moves or where migrants come from or go to. A high connection rate occurs where migrants for a deprived area tend to come from or go to non-deprived areas. They are moving 'vertically' between deprived and non-deprived areas, rather than 'horizontally' from one deprived area to another. Connection is measured as an average of two scores:

- the entry rate – the proportion of in-migrants who come from non-deprived areas; and
- the exit rate – the proportion of out-migrants who go to non-deprived areas.

Deprived areas and the people who live there are often perceived to be relatively cut-off or socially isolated. Policy makers express concerns about social isolation leading to "network poverty" as people miss out on access to important information flows (e.g. on employment opportunities). Isolation is seen as a factor behind the tendency for deprived areas to be stigmatised (Dean and Hastings, 2000).

2.3 Area change

Area change refers to the ways in which the number and the mix of people living in an area alters as a result of migration flows. It is measured through net migration flows – the net change in the population overall, and the net change in groups with particular characteristics. There is a particular focus on changes in the numbers with different levels of educational attainment

Net migration flows are frequently seen as undermining efforts to regenerate deprived areas. It is commonly argued that, if an individual sees an improvement in their situation as a result of a regeneration programme, they are likely to move out, taking their "gain" with them. The benefits of these programmes therefore "leak" out of deprived areas. As the out-migrant tends to be replaced by someone with a higher level of need (i.e. with a better "fit" with the area), the composition of the neighbourhood remains the same. In spite of the efforts of regeneration programmes, the gap between deprived and other places may not narrow.

3. ROA Areas

In July 2004, the Scottish Executive established the Community Regeneration Fund (CRF). The fund was to be used to help deliver on the Executive's *Closing the Opportunity Gap* objectives, especially the one related to deprived areas (Communities Scotland, 2004). CPPs were obliged to produce three-year Regeneration Outcome Agreements (ROAs), to be agreed with the Executive through Communities Scotland. These were to identify the geographic areas to be targeted. Expenditure was to be concentrated on the most deprived 15 per cent of Datazones in particular, as identified by the SIMD 2004, although a case could be made to take in some Datazones outside this group. The ROA Areas were to made up of one or more whole Datazones.

Just over one in six Datazones (17 per cent) is in an ROA Area. They cover almost every deprived Datazone (969 out of 975), where "deprived Datazone" refers to those in the most deprived 15 per cent. This group makes up 86 per cent of all ROA Datazones. A further 11 per cent of ROA Datazones falls into the 15-25 per cent most deprived band. Just 3 per cent

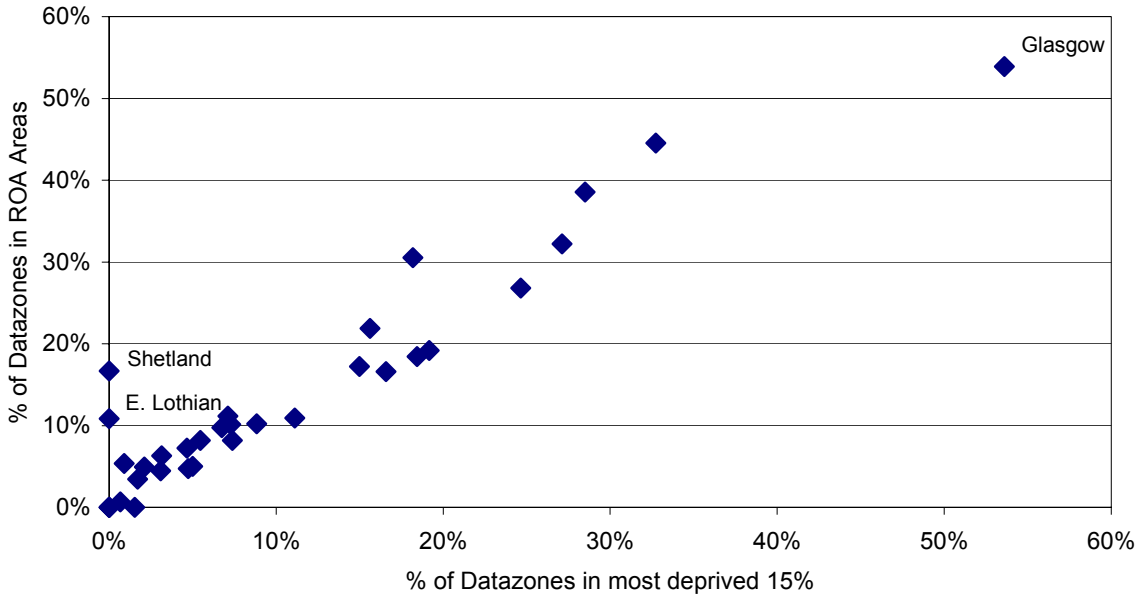
of ROA Datazones are outside the most deprived quartile – and just 0.6 per cent are outside the most deprived half.

The geographic spread of ROA Datazones mirrors the distribution of deprived Datazones (Figure 1 and Table 1). ROA Areas cover the majority of Datazones in Glasgow (54 per cent) and a large proportion of: Inverclyde (45 per cent); Dundee (39 per cent); West Dunbartonshire (32 per cent); East Ayrshire (31 per cent); North Lanarkshire (27 per cent); and Clackmannanshire (22 per cent). At the other extreme, four rural/island local authorities have no ROA Areas (Eilean Siar, Moray, Orkney and Scottish Borders); only Scottish Borders has any deprived Datazones. In two cases, authorities that have no Datazones in the most deprived 15 per cent do have a significant number of Datazones in ROA Areas: Shetland and East Lothian (17 and 11 per cent of Datazones in ROA Areas, respectively).

The ROA Datazones are grouped into 180 ROA Areas. These range in size from one to 58 Datazones. Most ROA Areas are small (one to three Datazones) but these account for a relatively small proportion of the total. The 26 largest ROA Areas have 13 or more Datazones and these account for more than half of the ROA Datazones.

Local authorities clearly have a large degree of choice in how they group Datazones into ROA Areas. At one extreme, Glasgow has chosen to have fewer, larger ROA Areas, each covering many Datazones. Its 10 ROA Areas have an average of 37 Datazones; the seven largest ROA Areas are all in Glasgow. In many cases, Glasgow's ROA Areas are comprised of several separate groups of Datazones – they are "archipelagos" rather than contiguous areas. North Lanarkshire has taken the opposite approach, with 45 ROA Areas with an average size of 2.5 Datazones. Very large ROA Areas may mask considerable internal variation in migration dynamics. It is more appropriate therefore to report results for Datazones within ROA Areas rather than for the ROA Areas themselves.

Figure 1: Distribution of area deprivation and ROA Areas by local authority



Notes: All Datazones and all local authorities.
Source: Scottish Neighbourhood Statistics (SNS).

The rest of the analysis focuses on the 28 local authorities that do have at least one ROA Area. As noted in Appendix A, the results exclude a small proportion of Datazones (less than one per cent) where the presence of a large communal establishment distorts the Census measure of household migration flows.

4. Area stability

4.1 Gross turnover

For Scotland as a whole, 10 per cent of the household population moved in the year before the Census. Since each migrant is counted as leaving an area and as arriving in an area (sometimes the same area), gross turnover is twice this level on average (or 19.8 per cent). There are great variations between Datazones, however, with gross turnover as low as 4 per cent and as high as 184 per cent.

Local authorities

There are significant variations between local authorities in gross turnover. Figure 2 (and Table 2) shows them in descending order of turnover; the same order is used for all Figures in this section.

For authorities as a whole, gross turnover is driven by a combination of factors. First, the position of authorities in the urban-rural hierarchy is important. The four major cities have the highest turnover partly as a result of their young demographic profile: they act as magnets for young single adults. By contrast, suburban authorities (Midlothian, East Renfrewshire and East Dunbartonshire) tend to attract families and older adults leading to low turnover. Second, overall growth or decline in population for a local authority impacts on turnover. Perth and Kinross, Highland, Fife and West Lothian are all in the top ten for population growth over 2001-5 (GROS, 2005) and all have relatively high turnover. Conversely, East Dunbartonshire, Midlothian, Renfrewshire, East Ayrshire and West Dunbartonshire all saw population decline and all have relatively low turnover.

ROA Areas

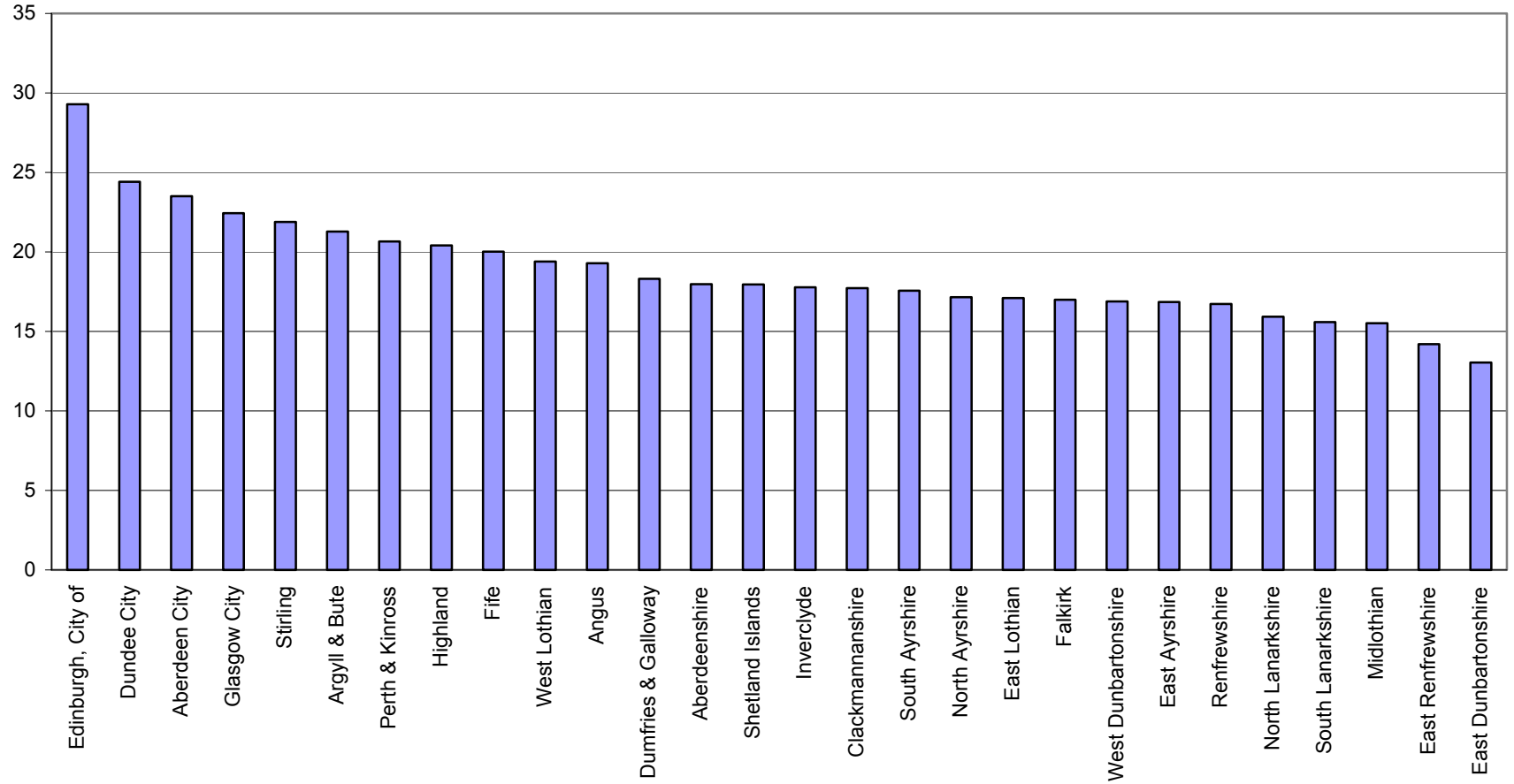
Across Scotland as a whole, gross turnover is marginally higher in ROA Datazones than others in the bottom quartile (20.3 compared with 20.0 per cent), and both are slightly higher than the less deprived Datazones (19.6 per cent). The differences between these groups are very minor compared with the differences within them.

Within each local authority, the pattern is similar (Figure 3). Turnover rates for ROA Datazones tend to be slightly higher than for non-ROA Datazones although both tend to move up or down in line with rates for the local authority as a whole. In 24 out of the 28 authorities, turnover in ROA Datazones is higher than in the least deprived group of Datazones; turnover in the middle group varies but this is the smallest group overall. In Edinburgh and Glasgow, however, turnover is lower in ROA Datazones than either of the other categories. Stirling and East Lothian show similar patterns albeit less marked.

Aberdeenshire stands out for having particularly high turnover in its ROA Datazones. The authority has two small ROA Areas and each covers a part of a coastal town (Fraserburgh and Peterhead). Coastal towns in general tend to have relatively high turnover. In part, this reflects the supply of private rented accommodation in these places, often in the form of Houses in Multiple Occupation.

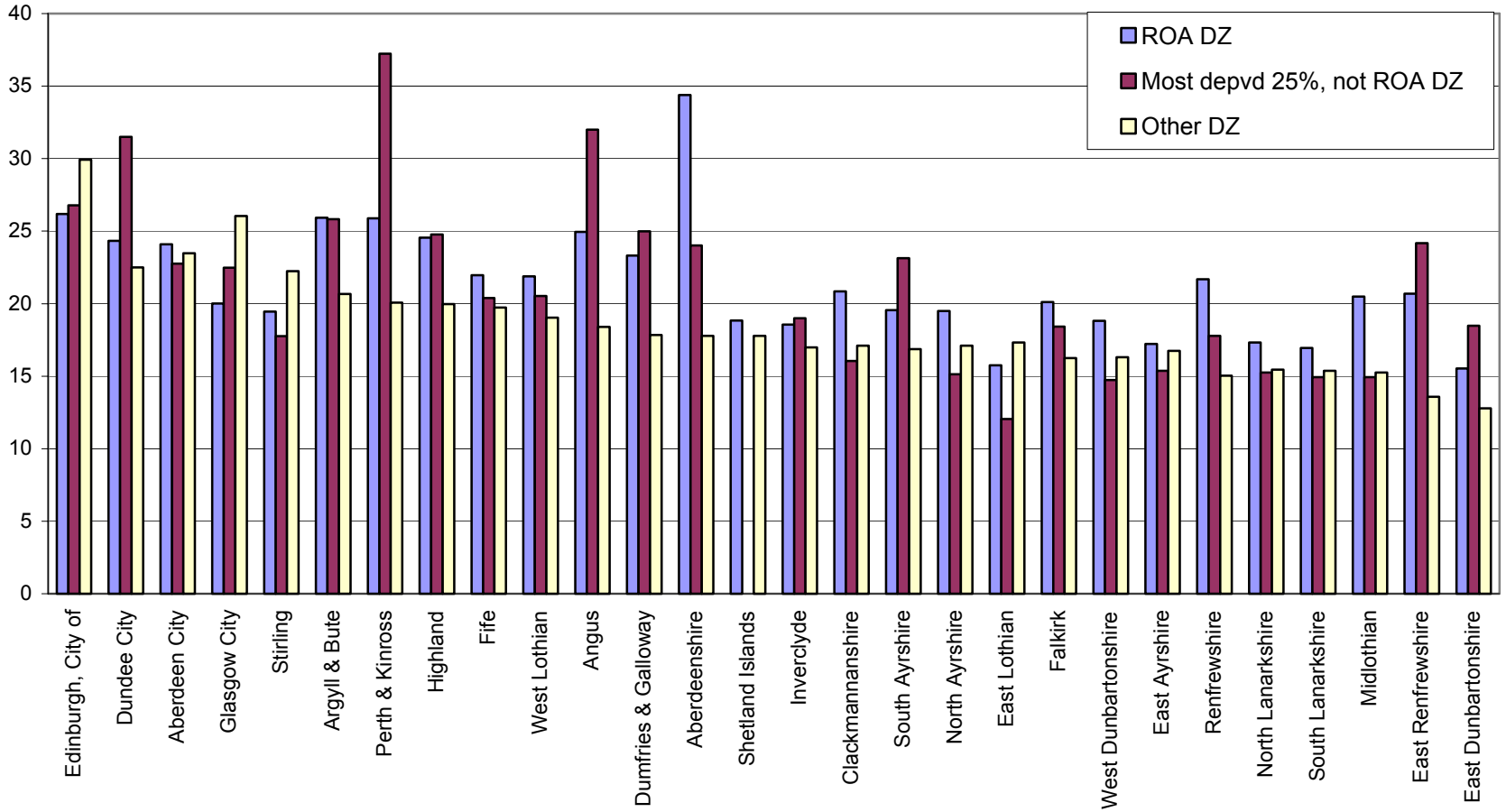
In Glasgow, there is evidence of a systematic difference between ROA Datazones in inner and outer areas of the city (Figure 4). Datazones around the city centre, along the river and into the inner north areas show markedly higher turnover than those further out, especially in the ring of areas around the outer north and east of the city. Not everywhere fits this simple contrast: much of Easterhouse appears to have high turnover, while Drumchapel and Castlemilk have more mixed patterns. In Dundee, also, it is the most central of the ROA Areas (Stobswell/Hilltown/Fairmuir) that has the highest turnover.

Figure 2: Gross turnover by local authority



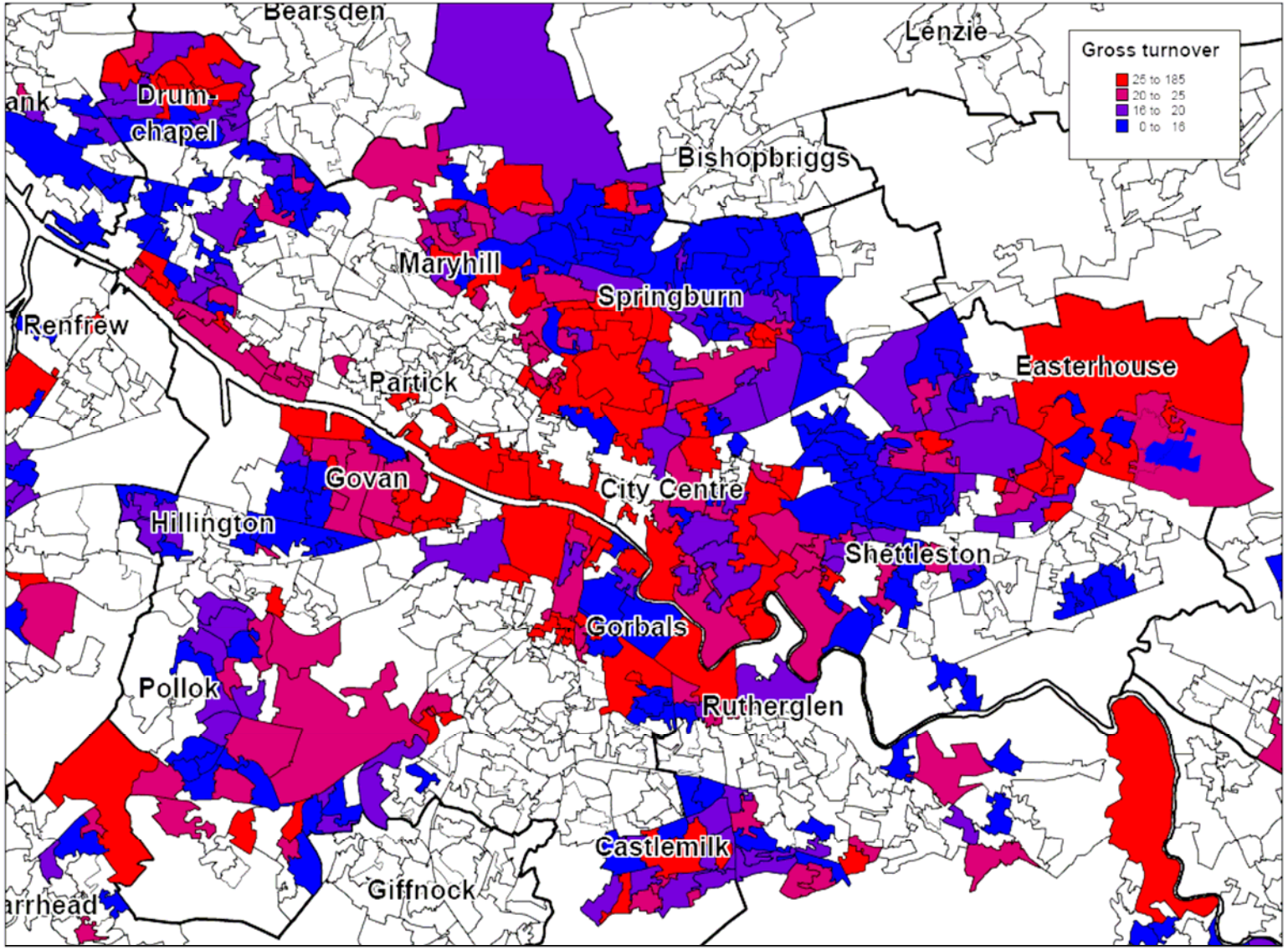
Notes: Covers only local authorities with ROA Areas.
Source: 2001 Census Area Statistics, Commissioned Tables C0572 © Crown copyright.

Figure 3: Gross turnover by type of Datazone by local authority



Notes: Covers only local authorities with ROA Areas.
Source: SNS and 2001 Census Area Statistics, Commissioned Tables C0572 © Crown copyright.

Figure 4: Gross turnover for ROA Datazones in Glasgow



Source: SNS and 2001 Census Area Statistics, Commissioned Tables C0572 © Crown copyright.

4.2 Components of gross turnover

The previous research showed that the main factor determining gross turnover for a given Datazone was the social composition of the area, especially the age composition; young adults (20-29) move three or four times as often as older adults. Areas that have a high proportion of young adults therefore tend to have high turnover rates. Once differences in social composition have been taken into account, there is only limited variation in turnover rates between more or less deprived areas. It has sometimes been assumed that deprived areas are less stable but the previous research showed that this is not true for Scotland or England.

These conclusions on the effects of social composition are based on the use of a statistical technique (multiple linear regression analysis) which estimates or models the effect of different characteristics on an area's turnover rate. Appendix B provides details of the area characteristics which are included in the model and the coefficients for the final model. For an individual area, we can then use the models to determine:

- the expected or ***predicted*** turnover level, given the area's characteristics; and
- the difference or ***residual*** between the actual turnover recorded and the predicted turnover level.

This distinction is potentially valuable for CPPs and others because it enables us to distinguish between areas where turnover is high or low because the social composition predisposes it to be so, and those where it is high or low for other reasons. In the latter case, we cannot say what these reasons are but it does highlight the need for further, local investigation.

Local authorities as a whole

The five authorities with the highest gross turnover (the four major cities plus Stirling) all had the highest levels of predicted turnover (Figure 5 and Table 2). Their gross turnover therefore reflects in large part their social composition. The five cities have an average of 16.2 per cent of their population in the age group 20-29, compared with 10.9 in the rest of Scotland. Edinburgh tops the table in terms of gross turnover because of a small positive residual, i.e. actual turnover is slightly higher than predicted. Dundee and Stirling also had slightly higher turnover than expected but, in Glasgow and especially Aberdeen, gross turnover levels were lower than expected.

Apart from this group, there are only modest variations in predicted turnover between authorities and these show very little relationship with gross turnover. For these authorities, therefore, the differences in gross turnover owe more to "residual" factors outwith the model. The group of authorities with the next highest levels of gross turnover after the cities all have positive residuals. Argyll and Bute has the highest average residual by a significant factor but the group also includes Perth and Kinross, Highland and Fife. The latter authorities all had relatively high rates of population growth, as noted already, and that may explain much of their residual. In the case of Argyll and Bute, however, this was not the case. Furthermore, that authority had one of the lowest rates of new housebuilding in Scotland in the years leading up to 2001. As Figure 7 shows, the positive residual in Argyll and Bute is common to Datazones in all three categories.

At the other end of Figure 5, the authorities with the lowest gross turnover all have negative residuals: East Dunbartonshire, East Renfrewshire, Midlothian, South and North Lanarkshire, and Renfrewshire. These authorities also have relatively low rates of population growth on average.

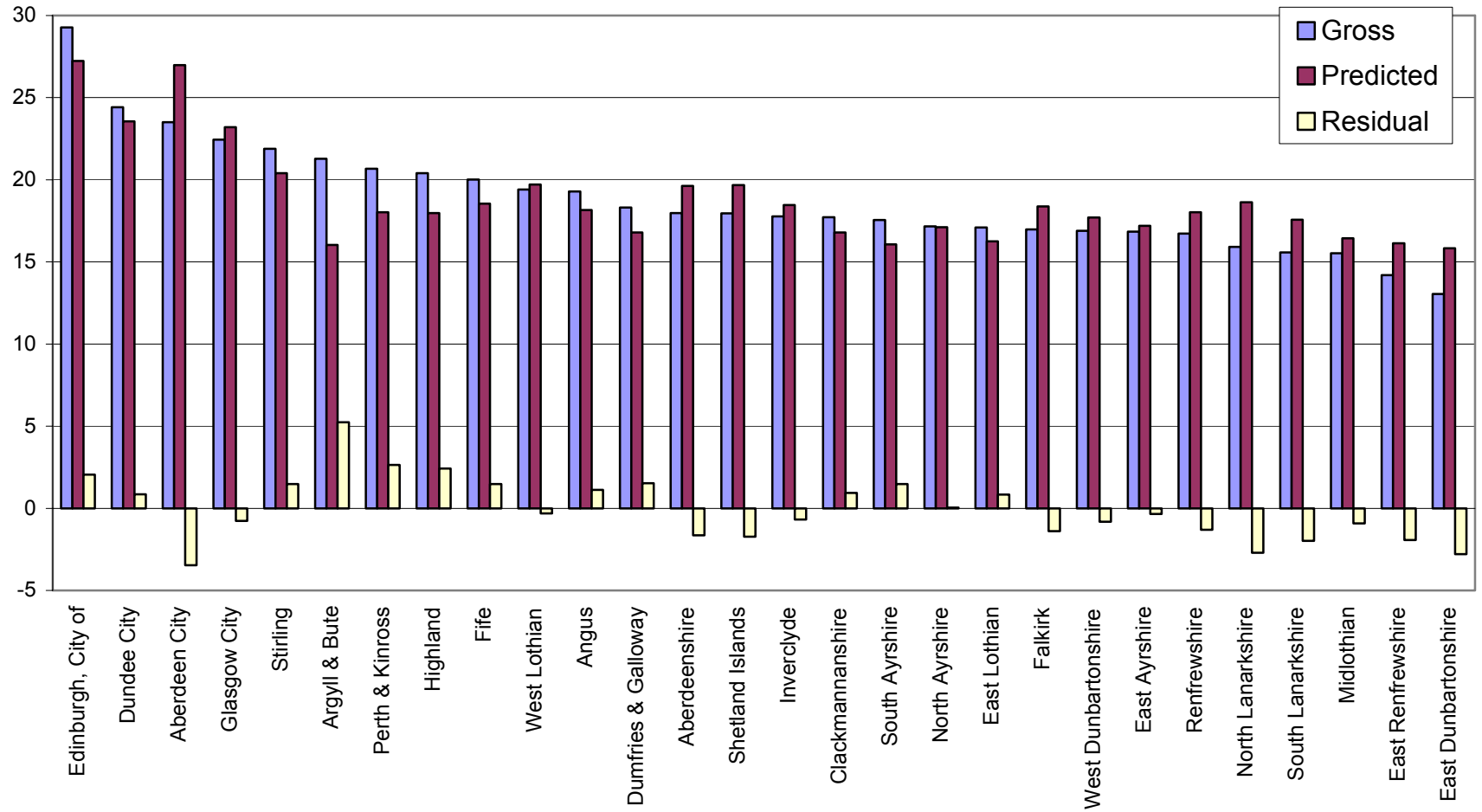
To illustrate the importance of the residual element, it is interesting to contrast two pairs of authorities: Perth and Kinross, and Highland, on the one hand; and North and South Lanarkshire, on the other. In all four authorities, the predicted turnover was very close to 18 per cent but gross turnover was nearly 5 per cent higher in the former pair than the latter. In the former pair, actual turnover exceeded predicted by around 2.5 per cent (the residual element). In the Lanarkshire authorities, actual turnover was around 2.5 per cent lower than expected; a very similar picture exists if we look just at the ROA Datazones in each authority (Figures 6 and 7). Only East Dunbartonshire and East Renfrewshire have lower residual turnover than the Lanarkshire authorities. Part of the explanation may be to do with overall rates of growth in the local authorities. Perth and Kinross, and Highland are amongst the fastest growing authorities in Scotland so that could explain at least some of their positive residual. The Lanarkshire authorities have average growth, however. It may be that there is a "Lanarkshire" effect, limiting average mobility in the two authorities. In England, Liverpool/Merseyside had a similar effect. Rates of housebuilding are similar in the four authorities so that does not appear to be the explanation.

ROA Areas

Figures 6 and 7 (and Table 2) show differences in predicted and residual turnover by type of Datazone. In most authorities, ROA Datazones have a social composition that predisposes them to have slightly higher turnover than the non-deprived Datazones (by just over 1 per cent on average). In Edinburgh and Glasgow, however, the composition of ROA Datazones gives them predicted turnover levels well below the rest of their authorities (by 5 per cent in each case).

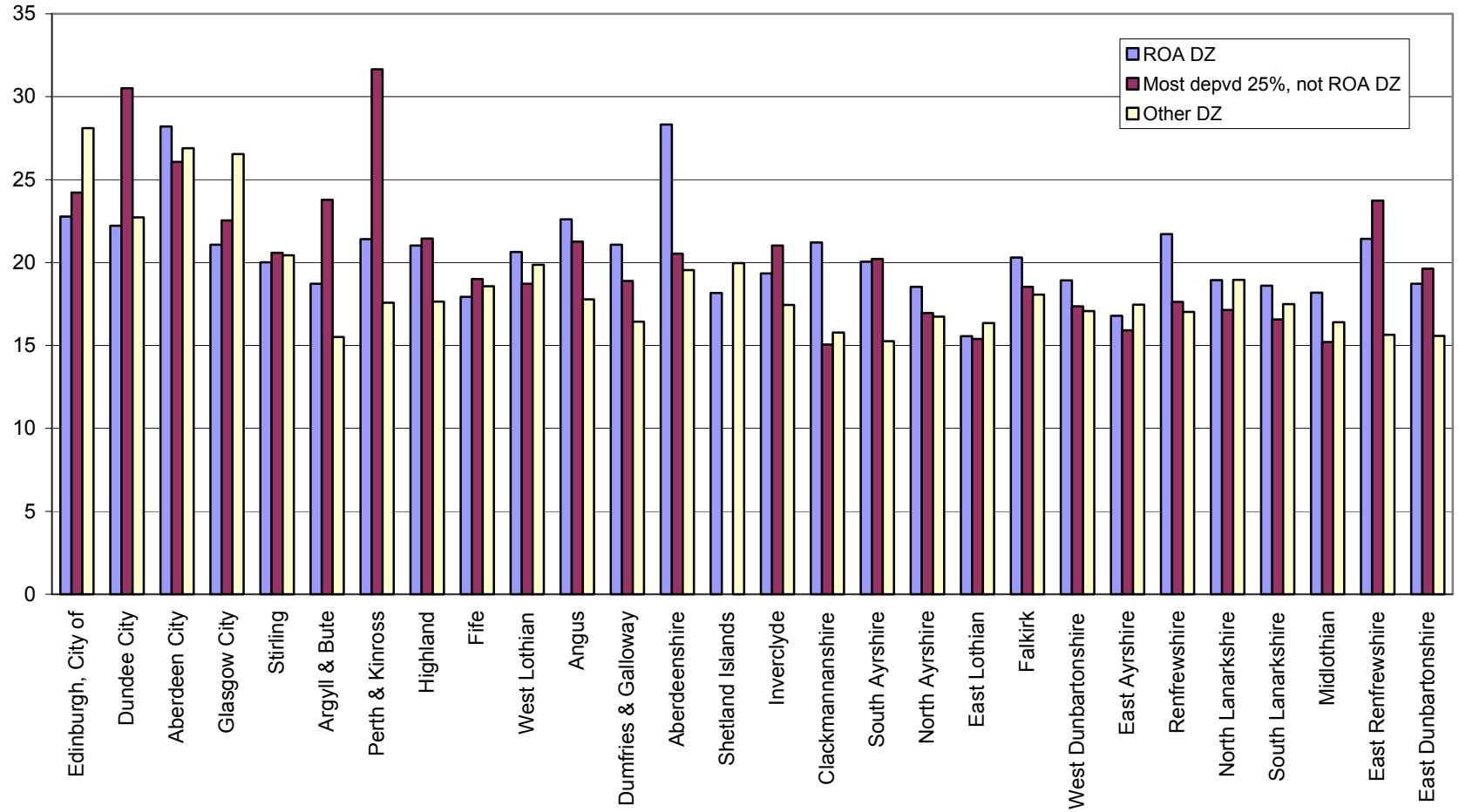
With the residual values, most authorities again have slightly higher values for ROA Datazones than others, but Glasgow is again an exception, along with Aberdeen, Stirling and one or two other authorities. In Glasgow, in other words, the relatively low turnover recorded in ROA Datazones (compared with non-ROA Datazones in the city) results both from compositional factors (low predicted values) and from other (residual) factors.

Figure 5: Components of gross turnover for local authorities



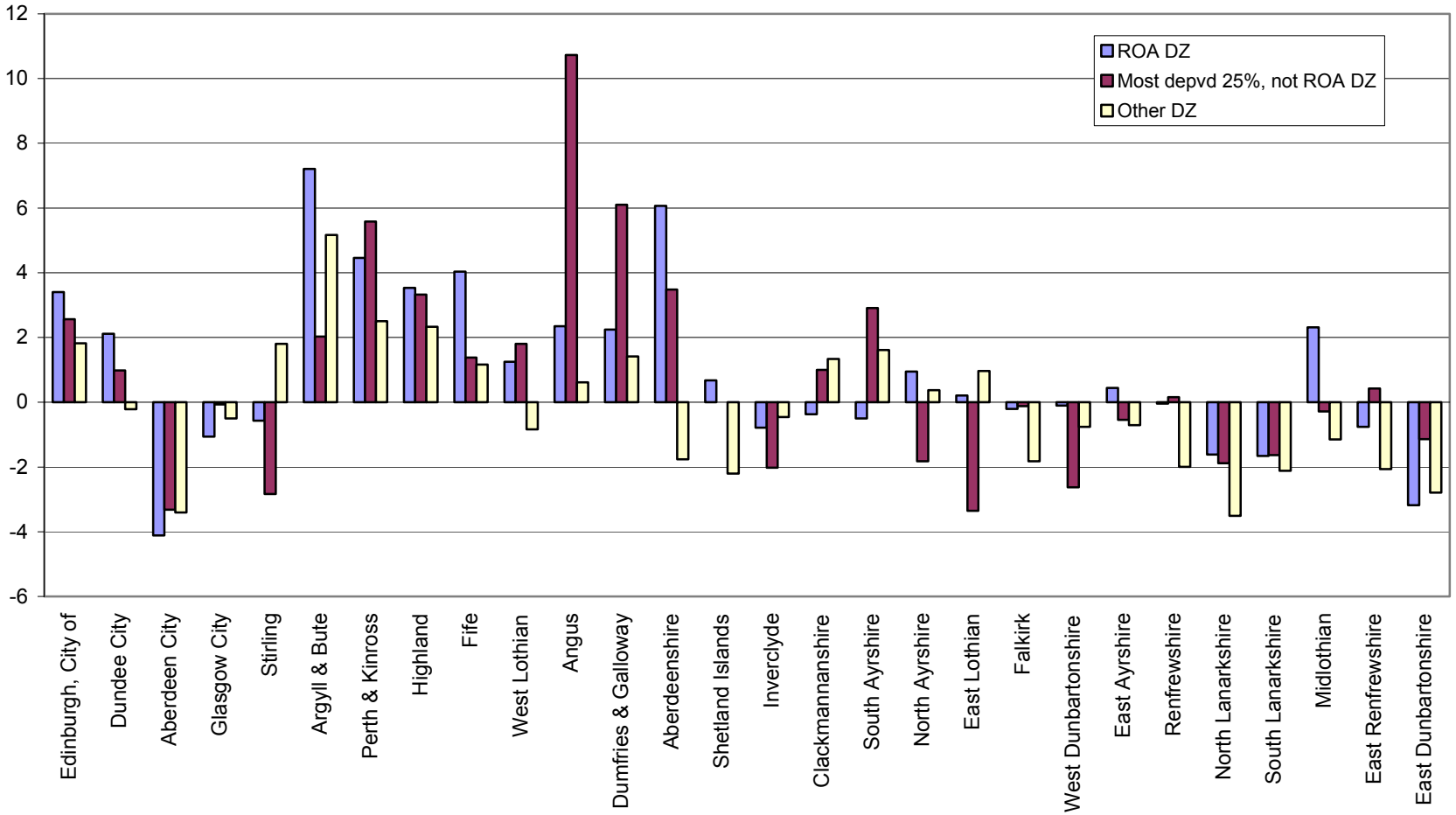
Notes: Covers only local authorities with ROA Areas.
Source: 2001 Census Area Statistics, Commissioned Tables C0572 © Crown copyright.

Figure 6: Predicted turnover by ROA type and local authority



Notes: Covers only local authorities with ROA Areas.
Source: SNS and 2001 Census Area Statistics, Commissioned Tables C0572 © Crown copyright.

Figure 7: Residual turnover by ROA type and local authority



Notes: Covers only local authorities with ROA Areas.
Source: SNS and 2001 Census Area Statistics, Commissioned Tables C0572 © Crown copyright.

5. Area connection

Unlike the measures for area stability or area change, the connection rate is only calculated for deprived Datazones, i.e. those in the most deprived 15 per cent. Since all but six deprived Datazones are in an ROA Area, results are simply reported for all deprived Datazones.

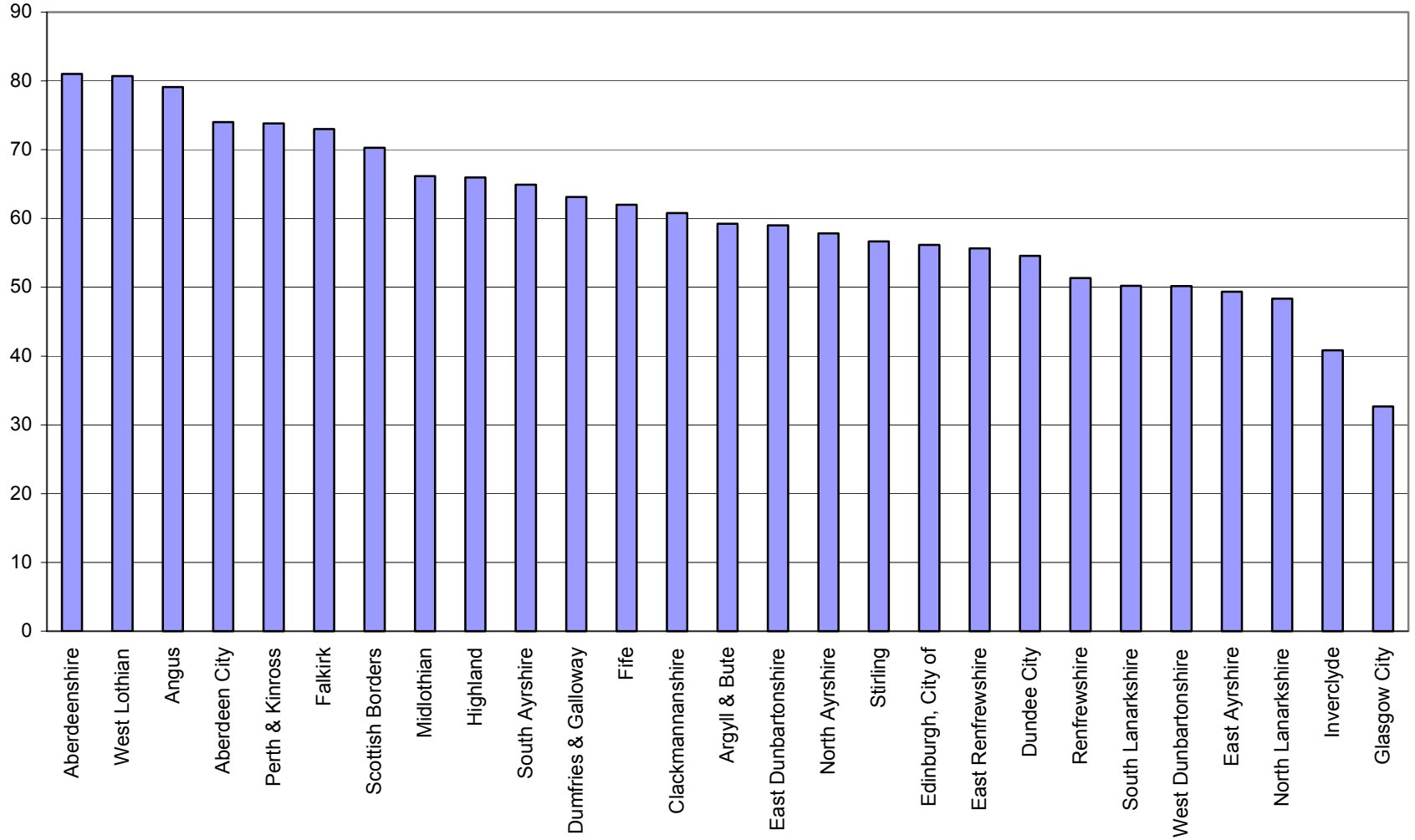
Connection rates for deprived Datazones average of 46 per cent. In other words, almost a half of all moves into or out of deprived Datazones are moves from or to a non-deprived Datazone. Connection rates range from 3 to 93 per cent.

From the previous study, two related factors are known to influence the connection rate. First, the Datazone's level of deprivation has a strong influence. The more deprived Datazones have lower connection rates on average because people may move 'vertically' to or from slightly less deprived areas but still move between areas regarded as deprived. Second, the average level of deprivation in the wider area around the Datazone also affects the connection rate. If an authority has a large number of deprived Datazones, more of the moves will be from one deprived area to another. These factors need to be borne in mind when examining connection rates for individual authorities or ROA Areas.

In addition, some aspects of population composition also impact on connection rates. Areas with more young adults have higher connection rates, while those with more children and young people up to 19 have lower connection rates. The presence of dependent children in the household appears to limit moves 'vertically' to less deprived areas.

As expected, Datazones in Glasgow have by far the lowest connection rates (Figure 8 and Table 3). They are not only the most deprived on average but they are also located in the most deprived local authority. This creates a quite different context for regeneration efforts in the city, compared with elsewhere. Fewer than one migrant in three comes from or goes to a non-deprived area. Only Inverclyde comes close to this level of disconnection. At the opposite extreme, there are several authorities where more than 70 per cent of migrants come from or go to non-deprived areas.

Figure 8: Connection rates by local authority – deprived Datazones only



Notes: Covers only local authorities with deprived datazones.
Source: SNS and 2001 Census Origin Destination file MG301, © Crown copyright.

6. Area change

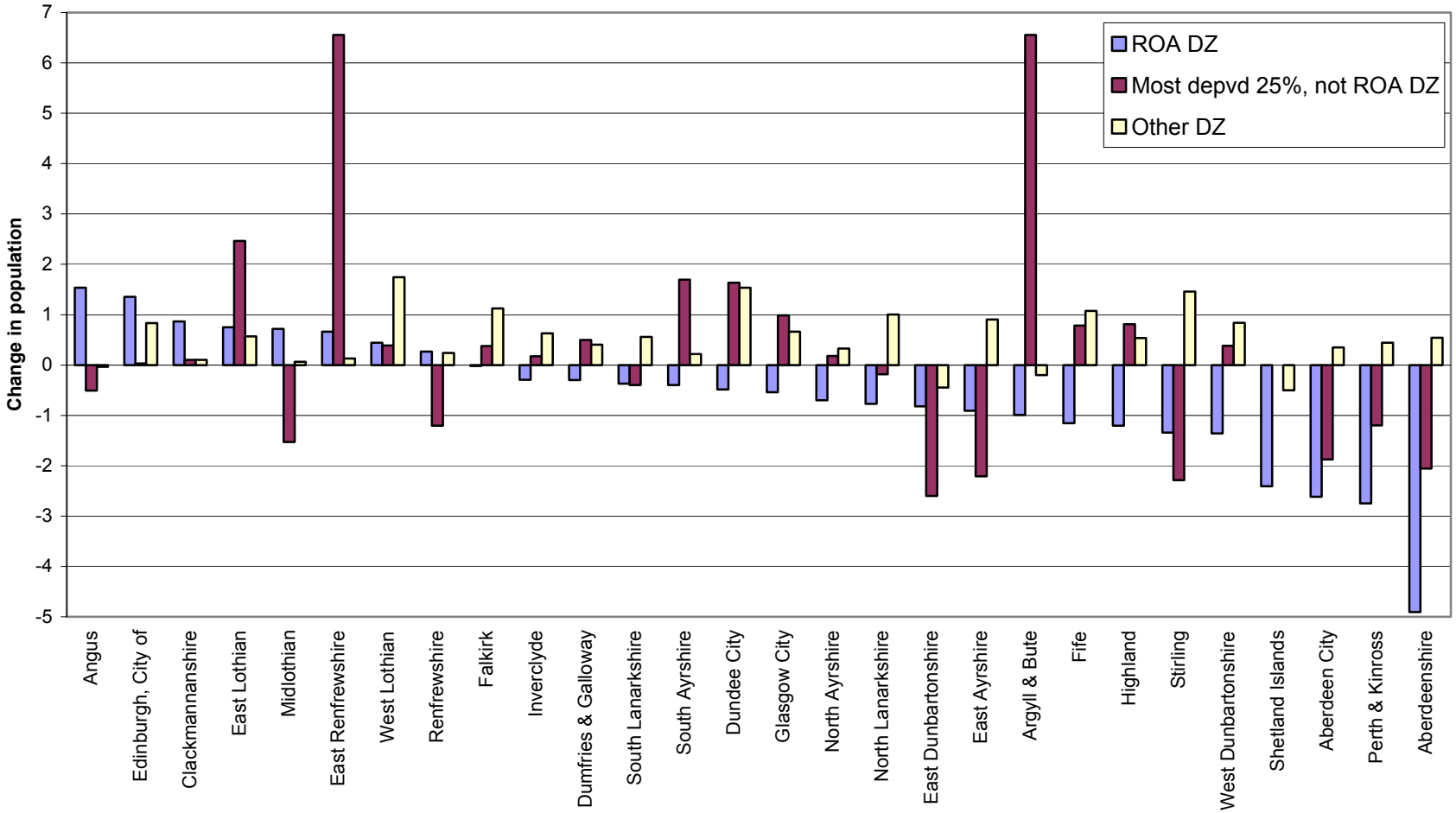
6.1 Change in population

Across all Datazones, population rose slightly through migration (by 0.4 per cent). (The slight gain is the result of excluding a small number of Datazones where migration flows are distorted by communal establishments – see Appendix A.) Within this, there was a move away from ROA Datazones. These areas lost population (0.5 per cent) while both the other categories grew – 0.2 per cent for those in the bottom 25 per cent, and 0.6 per cent for the least deprived Datazones.

Figure 9 (and Table 4) shows how the population was changing in each type of Datazone in each authority. The Figure is sorted by change in population within the ROA Datazones. In common with the national picture, most authorities saw a net loss in population from the ROA Datazones and a relative shift to the rest of the authority. There was great variation within this, however, with nine authorities losing over 1 per cent of the ROA Datazone population in the year before the Census. Authorities in this group generally have relatively few ROA Datazones but they do include Aberdeen, Fife and West Dunbartonshire.

At the left-hand end of the figure, there are eight authorities where the population in ROA Datazones grew. With the exception of West Lothian, the ROA Datazones in these authorities grew relative to the rest of their authority as well. This group is dominated by Edinburgh and the Lothians.

Figure 9: Change in population by type of Datazone and local authority



Notes: Covers only local authorities with ROA Areas.
Source: SNS and 2001 Census Area Statistics, Commissioned Tables C0572 © Crown copyright.

6.2 Change in concentration of deprivation

Migration flows can be measured separately for people with high or low levels of educational qualifications. "Low qualifications" refers to those with no formal qualifications or qualifications up to Group 1 on the Census classification (any number of Standard Grades or an SVQ Level 2, for example). Education is chosen here because it is strongly correlated with income, employment status and hence with risk of poverty or deprivation. By comparing net flows for those with high or low levels of qualifications it is possible to see whether migration is working to reinforce the concentration of more deprived individuals into more deprived areas.

ROA Datazones have more people with low educational attainment: 79 per cent of the population compared with 73 per cent for other Datazones in the most deprived quartile, and just 54 per cent for less deprived Datazones.

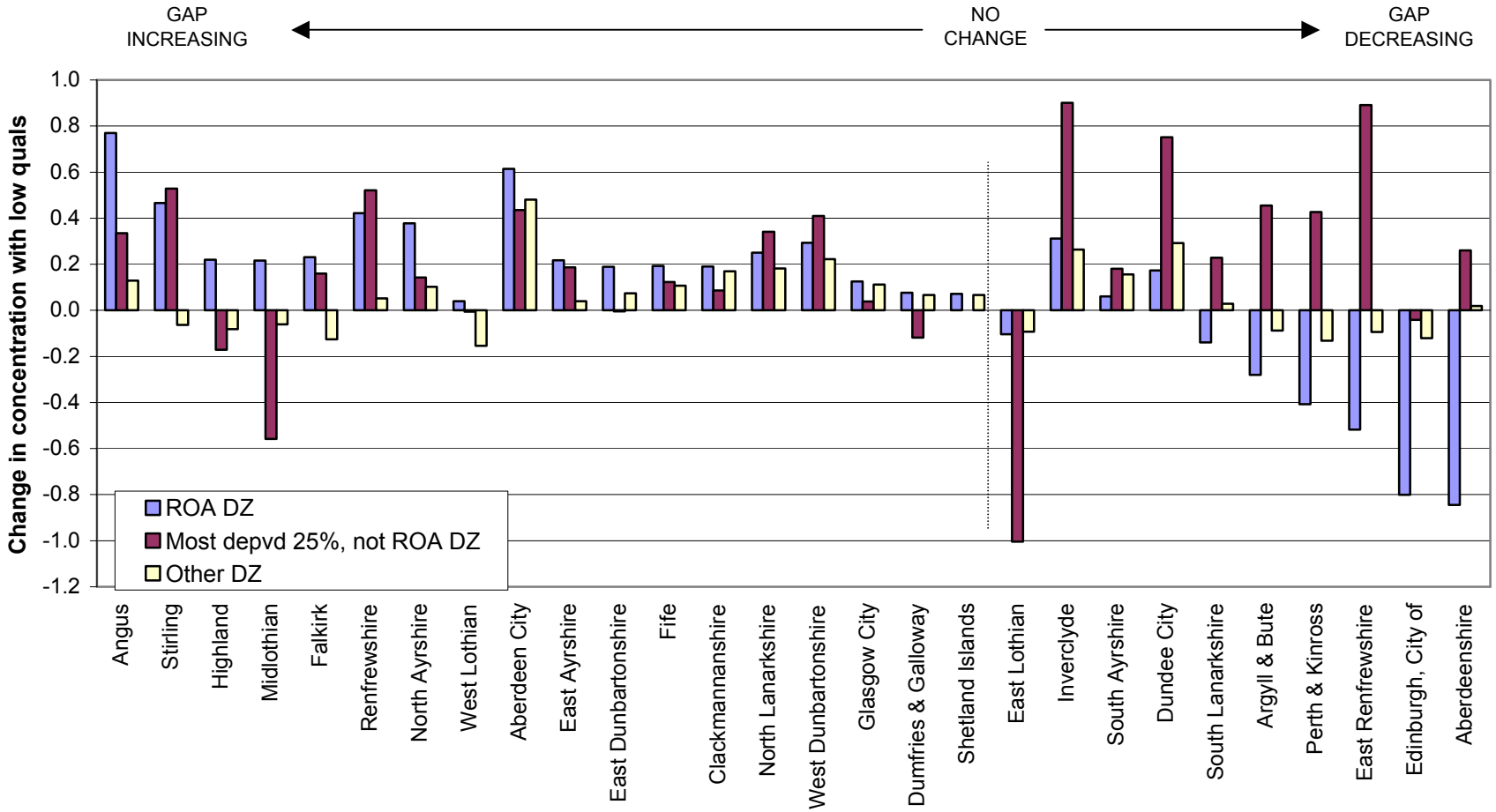
ROA Datazones lost both high and low qualifications groups through net migration but the rate of loss for the high qualifications groups was greater. As a result, the concentration of people with low qualifications in ROA Datazones rose. Conversely, the least deprived Datazones saw rises in both groups but the rises were at very nearly the same rate, so the level of deprivation did not. As a result, migration acted to increase the gap between ROA Datazones and the rest.

Figure 10 (and Table 4) shows the change in the concentration of people with low qualifications by local authority and by type of Datazone. It is sorted so that authorities with the biggest increase in the concentration of deprivation in ROA DZs (relative to the rest of the authority) are on the left. In these authorities, the gap between ROA Datazones and the rest is rising through the effects of net migration. At the other end, migration flows are acting to reduce the gap between ROA Datazones and the rest of the authority.

At the right-hand end, the authorities are recording significant falls in the concentrations of people with low qualifications in ROA Datazones. While several of these authorities have relatively few ROA Datazones, the group does include Edinburgh and South Lanarkshire. Dundee is seeing relative improvement in ROA Datazones but only because other Datazones are seeing more rapid rises in people with low qualifications.

At the other end of the table, the gap between ROA Datazones and the rest of the authority is increasing. Among authorities in this group are Falkirk, Renfrewshire and North Ayrshire.

Figure 10: Change in concentration with low qualifications by local authority and by type of Datazone



Notes: Covers only local authorities with ROA Areas.
Source: SNS and 2001 Census Area Statistics, Commissioned Tables C0572 © Crown copyright.

Appendix A: Note on data sources and methods

Data coverage and quality

For 2001, the Census attempted to provide as complete a picture as possible, using the One Number Census methodology. This not only fills in or "imputes" answers where respondents have not completed their Census form (e.g. incomplete address at origin for migrants), it also estimates the number of people for whom no information has been collected and imputes their likely characteristics. Once the data have been finalised, various steps are taken to protect confidentiality. These processes should not distort average values across the country but they do introduce additional "noise" when looking at figures for individual areas, particularly with small groups such as migrants.

Migrants to/from UK and those with no usual address

The moves made by people who leave the UK in the year before the Census can not be captured by the Census although the moves made by people who move in to the UK are. As this leads to an imbalance in the migration flows, the in-movers to the UK are omitted from this study. People who had no usual address (i.e. no permanent home) one year before the Census are treated as non-migrants.

Individual characteristics

The Census provides good information on the characteristics of people at the Census but little on their characteristics one year ago. Only place of residence one year ago is measured directly although some characteristics (e.g. age, gender or ethnicity) can be inferred. In other cases (employment status, housing tenure, household type or over-crowding, for example), it is not possible to know an individual's characteristics one year before the Census. Educational attainment is less volatile. It changes only slowly, especially if those under 25 are excluded. Importantly for this work, it is closely related to income and deprivation. Several of the analyses therefore make use of educational attainment.

Households population

At the Census, people are regarded as resident either in a household or in a communal establishment. The latter covers a range of institutional settings including military establishments, psychiatric hospitals, residential care homes, prisons and student halls of residence. The focus of this work is on the ways in which neighbourhood characteristics influence migration flows. Many people entering or moving between communal establishments have no control over where they go (e.g. prisoners or military personnel) or make their choice from a restricted set of places or with little regard to neighbourhood factors (students selecting halls of residence, for example). For this reason, we focus solely on the household population. The population in communal establishments at the time of the Census is excluded.

Areas where communal establishments distort household migration flows

The Census does not record household status one year ago. Thus every migrant living in a household at the time of the Census is counted as part of the household population for their area of origin one year ago. The same thing applies to communal establishments. This creates some severe local distortions in places where communal establishments have large numbers of people moving from or to the household population each year, as is the case most obviously with student halls of residence. In-migrants to these establishments are counted as having left a *communal establishment* at their place of origin (typically their parental home) even if there is no communal establishment there. This causes relatively few problems as these establishments tend to draw people from a very wide range of areas although it should

be noted that these flows are missing from our work. On the other hand, out-migrants are recorded as having left the *household* population of the area where the communal establishment is located. This can cause very significant distortions locally, with areas containing large student halls of residence recording a net loss of hundreds of people from the household population alongside a net gain of hundreds in the communal establishment population.

Since these flows are recorded as moves within the household population, they have a potentially significant impact on our analyses. They are therefore omitted throughout this paper. This covers less than one per cent of areas nationally (42 out of 6505). The great majority of these areas are outside the most deprived quartile of Datazones (35 out of 42). Only six ROA Datazones have problematic flows: three are in Glasgow, and one each in Aberdeen, Clackmannanshire and Dundee. The relevant Datazones are:

Datazone	**Local authority**	**ROA Area**
S01000188	Aberdeen	Seaton
S01000873	Clackmannanshire	Tullibody
S01001213	Dundee	Mid Craigie/Linlathen/Douglas
S01003415	Glasgow	Partick West/Hillhead/Anderston/City Centre
S01003447	Glasgow	Partick West/Hillhead/Anderston/City Centre
S01003695	Glasgow	Maryhill/Kelvin/Canal

Area deprivation

Measures of area deprivation are taken from the SIMD (Scottish Executive, 2004). These are provided at the level of Datazones and use data predominantly from 2001 and 2002. As such, they are directly comparable with the Census data in terms of both timing and geography. In constructing these indices, data are combined from a wide range of sources to provide measures of deprivation on a range of domains.

Appendix B: Model for gross turnover

We use linear regression models to separate out the relative impacts on gross turnover of compositional factors (social mix) and contextual factors (neighbourhood characteristics). The dependent variable is each Datazone's gross turnover rate. The final set of independent variables included is shown in Table B1 (see Section 5 of the main report for further details). It covers neighbourhood-level contextual factors (neighbourhood deprivation), social mix or compositional factors (age, ethnicity, caring responsibilities) and city-regional context. Two variables are also included to control for the effects of net population change on our measure of gross turnover (see Section 5 of main report for further details). Deprivation is measured using "dummy" variables for each decile. Table B2 shows the coefficients for the final model.

Table B1: Independent variables

Domain	Variable name(s)	Notes
Neighbourhood deprivation	Decile 2 etc.	Dummy variables, with Decile 1 (least deprived) as the default category
Net change	Net growth	Derived from the net change variable. "Growth" is zero where population unchanged or declined through migration. "Decline" is zero where population unchanged or grew through migration.
	Net decline	
Age	% 0 to 14 % 15 to 19 % 20 to 24 % 25 to 39 % 40 to 49	% of household population at Census
Ethnicity	% Asian % Black/Mixed/Other % Chinese	% of household population at Census
Caring responsibilities	% households caring	% of households with caring responsibilities at Census
City-regional context	% employment growth	Employment growth rate (average of four years prior to Census). See Appendix 1 of main report for details.
	% housing growth	New housing construction rate (average of four years prior to Census). See Appendix 1 of main report for details.

Table B2: Regression coefficients

		Regression Coefficient (B)	Standardised Regression Coefficient (Beta)	Significance
Constant		21.06		***
Neighbourhood deprivation	1 (Least depvd)	0.00		
	2	-0.31	-0.01	
	3	0.02	0.00	
	4	0.03	0.00	
	5	-0.38	-0.01	
	6	-0.93	-0.02	**
	7	-1.49	-0.04	***
	8	-1.34	-0.04	***
	9	-1.41	-0.04	***
	10 (Most depvd)	-0.19	-0.01	
Net change	Net growth	0.93	0.36	***
	Net decline	-0.71	-0.16	***
Age structure	% 0-14	-0.13	-0.06	***
	% 15-19	-0.20	-0.03	***
	% 20-24	1.24	0.49	***
	% 25-39	0.28	0.16	***
	% 40-49	-0.30	-0.08	***
Ethnicity	% Asian	-0.06	-0.02	*
	% Black/Other	1.24	0.09	***
	% Chinese	-0.32	-0.02	**
Care	% hhlds. caring	-0.73	-0.13	***
City-region	% emplt. growth	-0.86	-0.03	***
	% hsng. growth	-0.76	-0.01	

Notes: Covers all Datazones in Scotland. Significance levels: *** <.001; ** <.01; * <.1.
Source: 2001 Census Area Statistics, Commissioned Tables C0572 © Crown copyright.